

4.8 NOISE

For the Chevron El Segundo Marine Terminal Lease Renewal Project (Project), this section describes the concepts and terminology of noise, defines existing noise levels at noise-sensitive locations nearest to the Project site, and describes the regulatory settings associated with the Project. This section also identifies the applicable significance thresholds for noise impacts, assesses potential impacts of the Project and alternatives, recommends measures to mitigate significant adverse impacts, and discusses cumulative projects.

4.8.1 Environmental Setting

Noise is often defined as unwanted sound perceived subjectively by each individual. Noise levels at various locations of a city fluctuate and change character during different periods of the day. Exposure to severe noise levels over prolonged periods can cause physiological harm, including ear damage. The acceptability of common noise levels and types of noise varies among neighborhoods, individuals, and time of day. The following describes the concepts and terminology of noise and documents existing noise levels at noise sensitive locations nearest to the Project site.

Noise Terminology

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make sound. The pitch of the sound is related to the frequency of the pressure vibration. Because the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

A typical noise environment consists of a base of steady “background” noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is sound from individual local sources. These sounds can vary from an occasional aircraft overflight to virtually continuous noise from traffic on a nearby roadway. Table 4.8-1, Representative Environmental Noise Levels, lists representative noise levels for the environment.

Table 4.8-1
Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Flyover at 100 feet	—105—	
	—100—	
Gas Lawnmower at 3 feet	—95—	
	—90—	
	—85—	Food Blender at 3 feet
Diesel Truck going 50 mph ² at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime	—75—	
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area	—65—	Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
	—55—	Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
	—45—	
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime	—35—	
	—30—	Library
Quiet Rural Area during Nighttime	—25—	Bedroom at Night, Concert Hall (background)
	—20—	
	—15—	Broadcast/Recording Studio
	—10—	
	—5—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

² mph = miles per hour

Source: California Department of Transportation 1998

Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise upon people largely depends upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The rating scales of L_{eq} , L_{min} , and L_{max} are measures of ambient noise, while the L_{dn} and community noise equivalent level (CNEL) are measures of community noise. L_{eq} is the

average A-weighted sound level measured over a given time interval. L_{eq} can be measured over any time period, but is typically measured for one-minute, 15-minute, one-hour, or 24-hour periods. The CNEL is another A-weighted average sound level measured over a 24-hour time period. However, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. L_{eq} , L_{min} , and L_{max} , as well as L_{dn} and CNEL are all applicable to this analysis and defined as follows:

- L_{eq} , the equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- L_{dn} , the day-night average level, is a 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity during the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn} .
- *CNEL*, the community noise equivalent level, is a 24-hour average L_{eq} with a five dBA "weighting" during the hours of 7:00 P.M. to 10:00 P.M. and a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
- *CNEL annual average*, is the CNEL averaged over an entire year. CNEL is normally measured over a 24-hour period. However, the CNEL annual average measures the CNEL averaged over an entire year and reflects the potential increase in intensity of activities over a year as opposed to a 24-hour period (e.g., increased vessel calls, increase pump operations).
- L_{min} is the minimum instantaneous noise level experienced during a given period of time.
- L_{max} is the maximum instantaneous noise level experienced during a given period of time.

Noise environments and consequences of human activities are usually well represented by average noise levels during the day or night or over a 24-hour period, as represented by the L_{dn} or the CNEL. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime noise levels are isolated, natural settings that can provide noise levels as low as 20 dBA and quiet, suburban, residential streets that can provide noise levels of approximately 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial areas (typically 60 dBA). People may consider louder environments adverse, but most accept the higher noise levels associated with more noisy urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA).

When evaluating changes in 24-hour community noise levels, a difference of three dBA is a barely perceptible increase to most people (Caltrans 1998). A five dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness. New development within a community could potentially lead to activities that increase the 24-hour community noise levels.

Noise levels from a particular source decline as distance to the receptor increases. Other factors, such as the weather, wind, and reflecting or shielding factors, also help intensify or reduce the noise level at any given location. A rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about three dBA at acoustically “hard” locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically “soft” locations (i.e., the area between the source and receptor is unpacked earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about six to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about five dBA, while a solid wall or berm reduces noise levels by five to 10 dBA. The manner in which older homes (approximately 30 years old or older) in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units and office buildings is generally 20 to 25 dBA (HMMH 2008).

Underwater Sound

Measurements of underwater sound use a different reference level to calculate the decibel level than the reference level for air. The reference level for air is 20 microPascals (μPa) and the reference level for sound pressure levels underwater is 1 μPa . Since underwater and air sound levels use different reference levels, the two cannot readily be compared.

Underwater sound propagation can be affected by many factors, including water temperature, pressure, salinity, and air bubble occurrence. The attenuation losses due to absorption in water are less than the attenuation of sound in air. In most cases, sound in water will travel farther than sound in air.

Sensitive Receptors

Some land uses are considered more sensitive to noise than others, due to the amount of noise exposure and the types of activities typically involved. Residential areas, schools, libraries, religious institutions, hospitals, nursing homes, parks, some wildlife areas, and quiet outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses.

The onshore Marine Terminal pump and pipelines are located approximately 60 to 80 feet (18 to 24 meters [m]) from the bike path that runs along El Segundo beach. Residential areas are located approximately 0.3 miles (0.5 kilometers [km]) to the north-east from the Marine Terminal in El Segundo (along Binder Place and Loma Vista Street) and approximately 0.5 miles (0.7 km) to the south of the Marine Terminal in Manhattan Beach (along 45th Street and Strand Street).

Recreational areas include Dockweiler State Beach, north of the site approximately 2.9 miles (4.8 km); El Segundo Beach immediately to the west and north of the onshore facility; Manhattan State Beach, south of the site approximately 0.5 miles (0.7 km); and Sand Dune Park, approximately 0.7 miles (1.1 km) south of the onshore facility in Manhattan Beach.

The nearest commercial receptor is the Chevron Gas Station on the northwest corner of 45th Street and Vista del Mar. The nearest school is El Segundo Junior High School, approximately 0.45 miles (0.75 km) north of the onshore facility. There are also additional office and commercial buildings south of the Project site on Vista del Mar and north of the Project site near Grand Avenue.

As noted above, noise can potentially affect humans through sleep disturbance, speech interference, and workplace hearing loss. Man-made sounds also impact wildlife in a variety of ways, some of which can be detrimental. In general, man-made noise can affect animal behavior, mask acoustic signals, and affect physiology, including causing hearing loss.

The marine mammal fauna in the Bay is described in Section 4.3, Biological Resources.

Existing Noise Sources

The noise sources near the Project site and its vicinity are traffic on adjacent roads, aircraft operations at Los Angeles International Airport (LAX), railroad operations, and existing operations of the Marine Terminal and its onshore support facility. In addition, industrial operations at the Chevron Refinery and at neighboring facilities, including the Scattergood Plant and the El Segundo Power LLC Generating Station, contribute to the noise environment. The following provides a discussion of each of these noise sources.

Traffic Noise

The predominant sources of traffic noise at the Project site are vehicles on Vista del Mar/Highland Avenue, Rosecrans Avenue, and Grand Avenue. According to the Noise Element of the city of El Segundo General Plan, streets with adjacent residential uses and noise levels above 65 CNEL include portions of Center Street, Grand Avenue, Main Street, and Mariposa Avenue (El Segundo 2004).

The Noise Element of the Manhattan Beach General Plan shows that properties along Rosecrans Avenue (immediately south of the Refinery) and Vista Del Mar/ Highland Avenue are exposed to traffic-generated CNEL between 65 and 70 dBA.

Existing traffic-generated noise levels have also been modeled using a version of the Federal Highway Administration Traffic Noise Model (FHWA 1998) and traffic data provided by the cities of El Segundo and Manhattan Beach. The analysis indicates that properties along Vista del Mar/Highland Avenue are exposed to a traffic-generated CNEL of 68 dBA. The CNEL along Rosecrans Avenue and Grand Avenue are approximately 66 dBA and 62 dBA, respectively. Table 4.8-2 provides the distances to noise contours from the roadway centerline of each arterial. These estimates are based on a peak hour volume of 10 percent of the annual average daily traffic (AADT). Two-axle and three-axle trucks were assumed to contribute a percentage of traffic.

Table 4.8-2
Existing Roadway Noise Levels

Roadway	Segment	Noise at 100 feet, CNEL	Distance to Noise Contour ¹		
			60 CNEL	65 CNEL	70 CNEL
Vista Del Mar/ Highland Ave	South of Grand	68.3	670	212	67
Rosecrans Avenue	East of Highland	66.4	434	137	— ²
Grand Avenue	East of Vista Del Mar	62.3	170	54	— ²

¹ Distances measured in feet from roadway centerline.

² AADT and traffic data for this arterial segment do not generate noise levels that equal or exceed this noise level.

Notes: Peak hour estimated to be 10 percent of daily traffic. Two-axle and three-axle trucks assumed to be 3.2 percent and 1.4 percent of daily traffic, respectively. Algorithms defined in FHWA 1998 were used.

Aircraft Noise

LAX is approximately two miles north of the Refinery. According to Airport Impact Area maps developed as part of the LAX Noise Management program, the 65 dBA contours for aircraft noise is located just north of the Refinery at about the north end of the Los Angeles Department of Water and Power (LADWP) Scattergood Power Plant (LAX 2007). Noise levels from aircraft would therefore be 60 to 65 dBA CNEL at the noise-sensitive receptors located north of the Project site. At the nearest noise-sensitive receptors, south of the Project site on 45th Street and at Manhattan State Beach, the CNEL generated by aircraft operations is less than 60 dBA (city of Manhattan Beach 2003). However, noise generated by aircraft takeoffs is clearly heard.

Train Noise

Trains near the study area operate daily into and out of the Refinery approaching from the east but do not come close to the Project area. According to the city of El Segundo General Plan *“both Southern Pacific and Santa Fe Railroads operate daily to Chevron and other industries within El Segundo. Although this is a periodic source of noise, rather than continuous, like vehicular traffic, railroads typically produce high magnitudes of noise. Currently, the railroads in El Segundo do not travel through residential areas.”* (city of El Segundo 2004).

Since railroads operate within the Refinery, which is east of the Project site, and the railroads in El Segundo do not pass through residential areas, rail traffic would not contribute noticeably to the existing noise environment at the Project site. Since the noise-sensitive receptors north and south of the Project site are also located well away

1 from the train operations, rail traffic does not noticeably contribute to the CNEL levels at
2 those receptors.

3 *Industrial Noise*

4 The Manhattan Beach General Plan indicates two industrial noise sources in the area:
5 the El Segundo Generating Station and the Refinery. According to the General Plan,
6 *“the El Segundo Generating Station abuts residential uses in Manhattan Beach, and for*
7 *many years the noisy operations have impacted North End residents.”* Of the Refinery,
8 the General Plan states *“operating around the clock daily, this facility contributes to the*
9 *ambient noise environment that impacts Manhattan Beach residents, particularly those*
10 *whose homes face Rosecrans Avenue.”*

11 Additional industrial noise sources in the area include the LADWP Scattergood Power
12 Plant and the Hyperion Wastewater Treatment Plant, located north of the Project site.
13 The city of El Segundo General Plan Noise element indicates that *“in addition to mobile*
14 *sources, stationary noise sources, particularly from industry, contribute to ambient noise*
15 *levels in the city.”*

16 *Marine Terminal Noise*

17 Both offshore and onshore activities at the Marine Terminal create noise. Onshore
18 equipment operations include booster pumps, injection pumps, vacuum pumps, an
19 electric pressure test pump, a steam-driven sump pump, and a heater with steam heat
20 exchanger. Independent pump stations serve Berths 3 and 4. Data gathered by
21 Chevron as part of the 1996 Environmental Impact Report (EIR) (CSLC 1996) show that
22 Pump Station 4 generated a noise level of 63 dBA at the west property line and that the
23 L_{eq} was 64 dBA. This position is approximately 100 feet (30.5 m) west of the center of
24 the pump station, along the bike path fence. Adjusting this level to a CNEL, with
25 penalties for operations during the evening and nighttime, is shown in Table 4.8-3.

Table 4.8-3
Noise Levels Due to Existing Operations

Location	Distance (feet)	L_{eq} (dBA)	Contribution to Area CNEL	Contribution to Area Annual Average CNEL
Bike path	100	64.0	70.6	69.7
Manhattan Beach	2,600	35.7	42.4	41.4
Dockweiler Beach	15,312	20.3	26.9	26.0
Chevron Gas Station	2,630	35.6	42.3	41.3
El Segundo Residence	1,584	40.0	46.7	45.7
Manhattan Beach Residence	2,640	35.5	42.2	41.3
Offshore Operations	7,920	44.5	51.6	50.7

Notes: offshore operations based on peak day which includes vessel pumps operating for 24 hours, 2 tug diesel engines operating for 2 hours at night and 2 hours during the day, and horns/sirens operating a total of 18 times over a 24 hour period.

Table 4.8-3 provides estimates of L_{eq} generated by the pump station operations and received at Dockweiler State Beach, El Segundo Beach, the nearby Chevron Gas Station and Manhattan State Beach. Over a 24-hour time period, continuous pump operations would generate a CNEL higher than the L_{eq} at the same locations due to the penalties included in the CNEL calculations for evening and nighttime operation. Barrier effects have not been considered in these estimates.

Table 4.8-3 shows annual average CNEL levels, which account for the frequency of vessel visits to the Marine Terminal and periods when the Marine Terminal is not operating.

The existing buoy area is approximately 1.5 miles (2.41 km) offshore. Predominant marine traffic to this area includes tankers, barges, tug boats, and maintenance vessels. Noise from operations at the buoys includes vessels sounding their horns, diesel engine noise, and onboard equipment operations typical of light industrial marine activities, such as pumps and winches. These operations are intermittent and occur 1.5 miles (2.41 km) from the shoreline.

Estimates of noise impacts from offshore operations, including tug operations and vessel pumping operations, to onshore receptors are based on noise generated from 24 hours of vessel pumping, four hours of tug operations (two daytime hours and two nighttime hours), and associated horns and sirens. See Table 4.8-3.

Recreational boaters and fishermen may at times be exposed to increased noise levels from offshore terminal operations; however, most boaters and fishermen would be transitory in nature and their exposure to increased noise levels would be temporary. Those recreational boaters and fishermen subjected to longer periods of increased noise levels would do so at their own discretion and would not be considered sensitive receptors.

Noise levels from offshore Marine Terminal operations could impact marine mammals, fishes, and birds. Section 4.3, Biological Resources, describes the undersea environment and the potential impacts of the proposed Project on marine mammals, fishes, and birds.

Noise Measurements

Limited noise measurements in the vicinity of the Project site were obtained as part of an analysis on August 9 and 10, 2005. The measurements are representative of existing conditions. All measurements were taken within the fenced boundaries of the Marine Terminal. Table 4.8-4 provides the results of these measurements and their locations.

Table 4.8-4
Existing Ambient Noise Levels at the Marine Terminal

No.	Location	Date	Length of Measurement ¹	L _{eq} (dBA)
1	North of Sub Station 18	8-9-05	19:07:00	66.1
2	Fence Line across for Boeing Beach Exposure Site	8-9-05	19:44:00	61.9
3	East of Sub Station 2	8-9-05	19:53:00	65.9
4	Fence Line across from Flag Pole	8-9-05	19:29:00	60.7
5	Southeast corner of Forebay	8-10-05	21:30:00	56.9
6	Northeast corner of Forebay	8-10-05	21:27:00	56.8
7	Northwest corner of Forebay on Property Fence	8-10-05	21:20:00	53.9
8	Southwest corner of Forebay on Property Fence	8-10-05	20:47:00	55.8

¹ Length of measurement expressed as hours : minutes : seconds.

The noise baseline in the area is generally dominated by traffic noise, which produces a CNEL above 60 dBA in most areas. In combination with LAX aircraft noise and industrial noise sources, most sensitive receptors near the Marine Terminal would be subject to background noise levels exceeding 60 dBA CNEL.

4.8.2 Regulatory Setting

City of El Segundo

The city of El Segundo Municipal Code, Section 7-2-4, specifies that the exterior CNEL should not exceed ambient noise levels by 5 dBA at residential property or by 8 dBA at commercial or industrial property. These levels may be increased for short durations -- up to 5 dBA for activities lasting less than 15 minutes and up to 20 dBA for activities lasting less than one minute.

Section 7-2-10D requires that construction activities occur only between the hours of 7:00 A.M. and 6:00 P.M. on Monday through Saturday only; construction activities may not occur on Sundays or Federal holidays. In addition, construction noise is not permitted to exceed the 65 dBA standard when measured at the receptor residential property line (with allowable increases based on duration as discussed above). The Municipal Code also specifies that vibrations created by construction may not endanger the public health, welfare, or safety.

City of Manhattan Beach

The city of Manhattan Beach General Plan (city of Manhattan Beach 2006) provides a noise-related land-use compatibility matrix. Under the guidelines provided in the matrix, ambient noise levels are categorized as follows:

- Normally Acceptable. Specified land use is satisfactory, based on the assumption that any buildings are of normal conventional construction, without any special noise insulation requirements.
- Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
- Normally Unacceptable. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed

analysis of noise reduction requirements must be made and needed noise insulation features included in design.





- Clearly Unacceptable. New construction or development should generally not be undertaken.

Figure 4.8-1 provides the matrix. Long-term average noise levels below a CNEL of 60 dBA are normally acceptable with residential, commercial lodging, and institutional (church, library, and school) land uses. A CNEL of 60 to 70 dBA is conditionally acceptable for residential and commercial lodging land uses. A CNEL of 60 to 65 dBA is normally acceptable for churches, libraries, and schools. Noise levels up to 70 dBA, CNEL, are normally acceptable for commercial retail land uses such as shopping centers.

For wildlife areas and golf courses, a CNEL below 70 dBA is normally acceptable, while noise levels from 70 to 75 dBA are conditionally acceptable. Noise levels at parks are normally acceptable below a CNEL of 70 dBA.

Figure 4.8-1
Manhattan Beach Noise/Land Use Compatibility Matrix

Land Use Category	Community Noise Equivalent Level (CNEL) or Day-Night Level (Ldn), dB						
	55	60	65	70	75	80	85
Residential- Low-Density Single-Family, Duplex, Mobile Homes	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Residential- Multiple Family	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Transient Lodging - Motels, Hotels	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheaters	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Sports Arenas, Outdoor Spectator Sports	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhood Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Office Buildings, Business, Commercial and Professional	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Industrial, Manufacturing, Utilities, Agriculture	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable

 Normally Acceptable
  Conditionally Acceptable
  Normally Unacceptable
  Clearly Unacceptable

Source: City of Manhattan Beach 2003

The city of Manhattan Beach Municipal Code specifies daytime and nighttime noise standards for residential, commercial, and industrial properties. Table 4.8-5 provides these standards.

**Table 4.8-5
Community Noise Standards in the City of Manhattan Beach**

Land Use	Noise Standards L_{eq} (dBA)	
	Daytime ¹	Nighttime ²
Residential	55	50
Commercial	70	65
Industrial	75	75

¹ Daytime is defined as 7:00 A.M. to 10:00 P.M.

² Nighttime is defined as 10:00 P.M. to 7:00 A.M.

Source: City of Manhattan Beach, Municipal Code Section 5.48.160., LEE method

The city of Manhattan Beach Municipal Code exempts construction noise from the noise standards when construction only takes place between the hours of 7:30 A.M. to 6:00 P.M. on Monday through Friday and 9:00 A.M. to 6:00 P.M. on Saturday. All construction activities are prohibited on Sundays and Federal holidays.

4.8.3 Significance Criteria

The standards identified in the city of El Segundo and city of Manhattan Beach Municipal Codes and the city of El Segundo and city of Manhattan Beach General Plan are used to determine significance of noise generated by construction and operation of the Marine Terminal. If these standards are exceeded, a significant impact would occur.

Exceedance of the above standards would only be considered significant if the Project would cause a perceived change in existing sound levels to be noticeable. As stated previously, a change of 5 dBA is considered noticeable, and a change of 10 dBA represents a doubling of perceived noise and could cause sustained complaints. These guidelines are applied in combination with the city standards to identify significant noise impacts at the noise-sensitive receptor locations.

4.8.4 Impact Analysis and Mitigation Measures

The noise impact analysis is based on approximations of noise levels and associated changes in the ambient noise level that are likely to occur based on implementation of the proposed Project.

Noise impacts from on-site construction, maintenance, and operations noise sources are evaluated based partially on estimates by Chevron of the types and amount of equipment typically used for these activities. A comparison of existing conditions versus Project noise impacts has been prepared and compared with established thresholds to determine whether the net change in noise levels would be considered significant.

Operations

Future operational noise levels would be the same as current operations over any 24-hour period. Vessels would continue to arrive at the berths and utilize tugs and pumps to maneuver, discharge, and load cargo. The onshore pumps and equipment would continue to operate to load and unload cargo and the noise levels over the peak 24-hour period would be the same as the current operations. There would be an increase in vessel activity during the year (with vessels at the berths more hours per year), and associated increases in duration of pumping at the onshore facilities. This would increase the annual average CNEL values about 1.5 dBA based on the increased vessel calls to the Marine Terminal and would therefore be considered less than significant.

As previously noted, noise from operations at the buoys typical of light industrial marine activities includes vessels sounding their horns, engine noise, and onboard equipment operations such as pumps and winches. Recreational boaters and fishermen may at times be exposed to increased noise levels due to offshore terminal operations; however, most boaters and fishermen would be transitory in nature and their exposure to increased noise levels would be temporary. Those recreational boaters and fishermen subjected to longer periods of increased noise levels would do so at their own discretion and would not be considered sensitive receptors. Therefore, the noise impact from Marine Terminal operations on recreational boaters and fishermen would be less than significant.

Noise levels from offshore Marine Terminal operations could impact marine mammals, fishes, and birds. Section 4.3, Biological Resources, describes the undersea noise environment and the potential impacts of the proposed Project on marine mammals, fishes, and birds.

Traffic

The existing CNEL generated by traffic along Vista Del Mar/Highland Avenue and Rosecrans Avenue exceeds the city of Manhattan Beach noise standard at residential

receptors bordering these arterials. The CNEL along Grand Avenue also exceeds the city of El Segundo noise standards. Continuing existing operations would not include additional traffic movements on the nearby arterials. Traffic-generated noise along Vista Del Mar/Highland Avenue, Rosecrans Avenue, and Grand Avenue would continue to exceed the standards; however, the residential receptors would not experience an increase in traffic noise as a result of the Project. Therefore, impacts would be less than significant.

Construction

Continued operation of the Marine Terminal during the 30-year lease period would not require physical modification. However, maintenance activities are expected to continue under the proposed Project. Over the 30-year lease period, such activities could include replacing and repairing undersea pipelines at the Marine Terminal, which would involve pipeline assembly at a site in the Port of Los Angeles (POLA) or Port of Long Beach (POLB), pipeline transportation to the Marine Terminal via tug boats, and installation. Some pipeline installation may take place on the beach immediately west of the Marine Terminal to replace pipe under the beach.

Future repair and maintenance activities and construction associated with Marine Terminal operations over the term of the 30-year lease period would be limited to existing and projected operations as detailed in this EIR. Any construction or pipeline replacement that would increase capacity at the facility would require additional environmental analysis and mitigation. Repair and maintenance activities are considered those that do not result in addition to, or enlargement or expansion of, the object of such repair or maintenance activities.

The noise associated with replacing the pipelines would be a function of the combination of construction equipment and the amount of usage. Construction equipment utilized for maintenance activities would include welders, dozers, mobile cranes, and trucks for the onshore (beach area) portion and tug boats and a derrick barge for the offshore construction. Worker vehicles and delivery trucks would access the assembly site and the Marine Terminal during the assembly and installation phases.

Since assembly of the pipeline would occur in an industrial area near the ports where construction activities occur, the assembly phase would not create additional noise impacts on receptors.

Transporting the pipeline to the Marine Terminal would involve several tug boats and possibly a speed boat. Transporting the pipeline to the berth areas would take place offshore, a sufficient distance from onshore areas to not cause any impacts.

Installation of the pipeline at the berths, between the berths and the onshore areas (near-shore), and on the beach would involve welders, derrick barges, and cranes for offshore installation and backhoes, trucks, and cranes for onshore installation. Construction onshore or near-shore could impact the El Segundo beach areas and nearby residences.

Impact NOI-1: Construction Could Increase Noise Levels at Beach Areas

Noise from the proposed Project pipeline maintenance activities could impact beach areas during construction (Potentially Significant, Class II).

Noise levels at El Segundo Beach during onshore construction activities were estimated using the Federal Highway Administration Roadway Construction Noise Model version 1.1 (FHWA 2006). The model estimates that noise levels at the beach could be 83 dBA L_{eq} at 50 feet from the construction activities on the beach. This would likely represent a noticeable increase in noise levels above ambient noise without the construction activities (more than a 5 dBA increase) and therefore could potentially be an impact on beachgoers on El Segundo Beach. This could be considered a significant impact.

Beach visitors could be affected by these noise levels, particularly during high-use weekend and holiday periods. Therefore, a significant impact could occur at these beach locations if construction activities are conducted during the weekend or holidays.

The impacts due to construction at the closest residence in El Segundo would be 53 dBA L_{eq} , which would be less than the city of El Segundo construction limit of 65 dBA. This would be less than a significant impact.

Offshore activities during the pipeline installation phase, away from the shoreline at the berths, are estimated to generate noise impacts to shoreline areas of 49 dBA L_{eq} . This would be less than a significant impact.

Mitigation Measures

NOI-1. Construction Noise Mitigation. Construction activities shall be limited to the hours between 7:00 A.M. and 6:00 P.M. and shall not occur during the weekends or on Federal holidays. A Noise Mitigation Plan, as required by the city of El Segundo (General Plan objective N.1-2), shall be prepared

by the applicant to minimize noise impacts on beachgoers. The Noise Mitigation Plan shall be submitted to the California State Lands Commission staff for review and approval 60 days prior to the start of any construction.

Rationale for Mitigation

Significant impacts could occur for construction noise due to increases in noise levels for beachgoers to El Segundo Beach during pipeline replacement activities. The municipal code does not specify impacts to beach areas; only impacts to residences. However, construction at the beach could cause disturbances above 5 dbA to beachgoers, particularly during busy weekends and holidays. Therefore, mitigation measures have been proposed which would restrict the time and duration of construction activities to minimize the noise effects on beachgoers.

**Table 4.8-6
Summary of Significant Noise Impacts and Mitigation Measures
Proposed Project**

Impact	Mitigation Measures
NOI-1: Construction Could Increase Noise Levels at Beach Areas.	NOI-1. Construction Noise Mitigation.

4.8.5 Impacts of Alternatives

No Project Alternative

The No Project Alternative would involve closing both offshore and onshore facilities at the Marine Terminal. Therefore, there would be no operational noise impacts generated by the Marine Terminal under the No Project Alternative. It is possible that the onshore portion of the Terminal would revert to open-space recreational uses. In such a case, future noise levels in the beach area would be reduced as compared to existing conditions.

Construction impacts related to removal of the onshore and offshore portions of the Marine Terminal would produce impacts similar to Impact **NOI-1**, with impacts to onshore beach areas being potentially significant. **MM NOI-1** would still apply.

CBM Relocation in State Waters for Crude Only

Offshore operations at the relocated conventional buoy mooring (CBM) berth would be farther away from the shore line and would contribute less to the operational noise levels than the current operations. However, since Berth 3 would continue to operate at the same location, the reduction in impacts to onshore areas would be minimal.

At the onshore Marine Terminal facility, impacts would be similar to the proposed Project since the Marine Terminal onshore equipment would continue to operate and move crude oil and products to and from vessels.

For maintenance construction activities, Impact **NOI-1** would occur under this alternative since maintenance pipeline replacement would continue. **MM NOI-1** would still apply.

Construction operations at the Marine Terminal and onshore facility related to the CBM relocation would include extending the undersea pipeline and removing and installing buoys. The types of equipment and usage associated with these operations would be similar to those examined for future maintenance, and noise levels related to construction of the offshore berth would be as described under the offshore construction associated with the proposed Project pipeline replacement.

SPM Replacement in State Waters for Crude Only

Operations at the Marine Terminal and onshore facility with the single point mooring (SPM) replacement alternative would be the same as the CBM relocation alternative.

For maintenance construction activities, Impact **NOI-1** would occur under this alternative since pipeline replacement related to maintenance would continue. **MM NOI-1** would still apply

Construction of the SPM would produce similar impacts as the CBM alternative and the offshore portion of the pipeline replacement related to maintenance as part of the proposed Project.

VLCC Use of Pier 400

Under this alternative, operations at the Marine Terminal and onshore facilities would be reduced because less crude oil would be transferred through the Terminal. Noise impacts associated with the offshore vessel operations or the onshore Marine Terminal operations would be the same over a 24 hour period as vessels would continue to use

the Marine Terminal, but would be reduced on an annual basis. Impacts would occur at the POLA Pier 400 facility where VLCC vessels would unload. However, the Pier 400 facility is within the POLA, where there is substantial industrial activity. The POLA EIR for the Pier 400 facility determined that operations at the Pier 400 terminal would generate noise impacts of less than 1 dBA at sensitive receptors (POLA 2008). Noise impacts would therefore be less than significant.

For maintenance construction activities, Impact **NOI-1** would occur under this alternative since pipeline replacement related to maintenance would continue. **MM NOI-1** would still apply.

4.8.6 Cumulative Projects Impact Analysis

Noise sources that would cumulatively contribute to the existing and future environment include development at the nearby industrial facilities, community growth, associated construction activities, and traffic noise. The proposed Project is not anticipated to increase traffic on local roadways beyond existing conditions. Therefore, while traffic noise would continue to exceed the residential noise standards for existing and future conditions, the proposed Project's contribution to cumulative noise impacts (traffic and operational) with industrial and community development would not be cumulatively considerable. Cumulative operational impacts would be less than significant.

Construction noise would be temporary and limited to the immediate vicinities of the construction sites. Because existing uses in the Marine Terminal area are fully developed, there is a low potential for concurrent construction activities. Therefore, cumulative construction noise impacts would be less than significant.